

WHAT IS CLAIMED IS:

1. A method of automatically identifying a fiber type in an optically amplified fiber optic span, said span having connected thereto a transmit amplifier, and a receive amplifier, said method comprising the steps of:
 - obtaining a spectral power profile near each of said transmit amplifier and said receive amplifier;
 - determining a measured score for said fiber span based on a spectral loss profile for said fiber span; and
 - comparing said measured score with known identification scores in a lookup table in order to facilitate a positive determination of the fiber type for the fiber span if said measured score matches a score in the table within a given tolerance.
2. A method according to claim 1 wherein the measured score being outside the given tolerance is interpreted as identifying the presence of multiple fiber types within the span.
3. A method according to claim 1 wherein said spectral loss profile is calculated by subtracting the spectral profile of said transmit amplifier from the spectral profile of said receive amplifier.
4. A method according to claim 1 further comprising, before said step of comparing:
 - calculating a known identification score for each of a plurality of fiber types; and
 - entering the known identification scores in the look up table.

5. A method according to claim 4 wherein said step of calculating a known identification score comprises:

5 focusing said spectral loss profile across a pre-defined window of wavelengths;
scaling said spectral loss profile with respect to a pre-defined value to produce a normalized distribution;
10 calculating statistical values based on the normalized distribution; and
summing weighted values of said statistical values.

- 15 6. A method according to claim 1 further comprising the steps of:

mapping the fiber types for each span within a fiber link; and
20 automatically mapping a network based on the mapping of each link in the network.

7. A method of automatically identifying a fiber type in an optically amplified fiber optic span, said span having connected thereto a transmit amplifier, and a receive amplifier, said method comprising the steps of:

25 obtaining a first spectral profile near said receive amplifier;

applying a Raman pump laser to said system;

30 obtaining a second spectral profile near said receive amplifier after said step of applying the Raman pump laser;

determining a score for said fiber span based on a Raman gain profile for said fiber span; and

35 comparing said score with known identification scores in a lookup table in order to make a positive

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determination of the fiber type for the fiber span if the measured score matches a score in the table within a given tolerance.

5 8. A method according to claim 7 wherein the measured score being outside the given tolerance is interpreted as identifying the presence of multiple fiber types within the span.

10 9. A method according to claim 7 wherein said Raman gain profile is calculated by subtracting the first spectral profile near said receive amplifier from the second spectral profile near said receive amplifier.

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10. A method according to claim 7 further comprising, before said step of comparing:
 calculating a known identification score for each of a plurality of fiber types; and
 entering the known identification scores in the look up table.

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11. A method according to claim 10 wherein said step of calculating a known identification score comprises:

 focusing said Raman gain profile across a pre-defined window of wavelengths;

30 scaling said Raman gain profile with respect to a pre-defined value to produce a normalized distribution;

 calculating statistical values based on the normalized distribution; and

 summing weighted values of said statistical values.

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12. A method according to claim 7 further

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comprising the steps of:

mapping the fiber types for each span within a fiber link; and

automatically mapping a network based on the mapping of each link in the network.

13. A fiber type identification system for automatically identifying a fiber type in an optically amplifiable fiber optic span comprising:
- one or more optical spectrum analyzers for measuring a spectral profile near one or more amplifiers attached to said fiber optic span;
- a lookup table of known identification scores for each of a plurality of fiber types; and
- means for calculating a score for a span based on said profile measurements; and
- means for comparing said score to the known identification scores in the lookup table in conjunction with a given tolerance in order to identify the fiber type of the span.
14. A system according to claim 13 further comprising a display means for displaying the result of the fiber type identification.
15. A system according to claim 13 wherein said score is a spectral loss profile.
16. A system according to claim 13 further comprising:
- a Raman pump laser for applying a Raman amplification to said fiber optic span.
17. A system according to claim 16 wherein said optical spectrum analyzers measure a profile near said one or more amplifiers before and after

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the application of the Raman amplification.

18. A system according to claim 17 wherein
the score calculated by said processor is a Raman
gain profile that takes into account both sets of
measured profiles.

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